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CATALOGUE

On the Palaearctic tiger beetle species (Coleoptera: Cicindelidae) in the collections of "Grigore Antipa" National Museum of Natural History, Bucharest

Rodica Serafim[1], Melania Stan[1]

1 *"Grigore Antipa" National Museum of Natural History, 1 Kiseleff Blvd, 011341 Bucharest, Romania*

Corresponding author: *Melania Stan* (mstan@antipa.ro)

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Abstract

The paper deals with twenty-two species and subspecies of tiger beetles of the Palaearctic Region, except the species of Romanian fauna. The specimens preserved in the collections of "Grigore Antipa" National Museum of Natural History, Bucharest has been reviewed.

Keywords

Cicindelidae, collection, *Calomera*, *Cassolaia*, *Cephalota*, *Cicindela*, *Cylindera*, *Homodela*, *Lophyra*, *Megacephala, Myriochila*, *Neolaphyra*, Palaearctic.

Introduction

According to the Palaearctic Catalogue of Coleoptera (Putchkov and Matalin 2003), the tiger beetles are represented by 34 Palaearctic genera, of which 13 genera also have species with a Western Palaearctic distribution. The "Grigore Antipa" National Museum of Natural History, Bucharest has small collections of tiger beetle species from 10 Palearctic genera. *Homodela* is the only genus that does not have representatives with a western Palearctic distribution. Data regarding the eleven species and subspecies of Romanian fauna were published in a previous article (Stan and Serafim 2021). The aim of this paper is to present other Palaearctic tiger beetle species which are preserved in two collections: the Collection of Palaearctic

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PENSOFT.

Coleopterans (**CPC**) organized in the period 1978–1979 by Aurelian Popescu Gorj and the Collection of Cicindelidae (**CC**), recently formed (2021–2022).

Material and Methods

The Collection of Palaearctic Coleopterans (**CPC**) gathers specimens of old collections acquired between 1883–1923. These collections are made up of Richard Canisius (entomologist and painter that worked at the Museum during 1907–1934), Friedrich Deubel (amateur entomologist from Braşov and a part of his collection was bought by the Museum in 1923), Deszö (Dénes) Kenderessy (amateur entomologist, his collection includes specimens collected from the Haţeg Depression at the end of the 19th century but also specimens obtained through exchanges with foreign collaborators) and especially Arnold Lucien Montandon (French citizen specialized in Heteroptera, Coleoptera and Orthoptera, that worked at the Museum during 1896–1907). The species from the Montandon's collection were identified by his French collaborators: Jean Baptiste Auguste Puton (1834–1913), a zoologist, specializing in Heteroptera, Bernard Édouard de Brunier (?–1949), a career soldier and amateur entomologist and Louis Marie Joseph Puel (1872–1939), a winegrower, amateur entomologist, interested in all Palaearctic beetles.

The Cicindelidae Collection (**CC**) was completed in 2022 with specimens obtained through exchange by Aurelian Popescu-Gorj (1914–1997) with foreign specialists and collaborators: Jean Balazuc, Georges Ledoux, Jean Renault (France), Francesc Bajet (Spain, Barcelona), César Gonzalez Peña (Spain, Zaragoza), Walter Heinz (Germany, Schwanfeld). The specimens collected by "Grigore Antipa" Museum in collaboration with the "Oceanic Club" Oceanographic Exploration and Marine Environment Protection Society (Constanţa) within "Romanian contributions to the study of the Mediterranean fauna" research project were added to this collection. Within this project several expeditions such as: "Taurus", 2005 (Turkey), "Punia", 2006 (Tunisia), "Atlas", 2007, "Dakhla", 2012 and "Merzouga", 2013 (Morocco) were carried on. Furthermore, a part of the material was donated by Igor Ceianu, Mihai Şerban Procheş and Aurelian Popescu-Gorj. The new collection gathers specimens collected by Nicolae Săvulescu (a physician, passionate about insects; he was an external collaborator of the Romanian Fauna group of Romanian Academy and a collaborator of the Museum) and Sergiu Panin (a well-known coleopterologist at the Romanian Institute of Agronomic Research).

All specimens belonging to the Collections were identified/revised by the authors. The specimens were identified using the following publications: Bedel (1895), Bourgeois (1897), Reitter (1908), Panin (1952), Cassola (1970), Korell and Cassola (1987), Franzen (1999, 2003), Gebert (2004). Nomenclature used is that of the Catalogue of Palaearctic Coleoptera (Putchkov and Matalin 2003). Examined material includes the country, the name of expedition (where applicable), the number of the specimens and the sex (where it was identified), the collecting date (except

for very old specimens) and the collector. The information in square brackets is a supplement to the data collected. Geographical distribution and habitat types based on literature data are presented for each species. The aedeagus of *Neolaphyra truquii* was studied and photographed using a Zeiss Stemi 2000-C stereomicroscope with a Cannon Power Shot A620 camera attached.

Abbreviations of the collectors name: ALM - Arnold Lucien Montandon; AP - Auguste Puton; APG - Aurelian Popescu Gorj; BB - Bernard de Brunier; CC - Cristina Constantinescu; CGP - César González Peña; CP - Corneliu Pârvu; CS - Cătălin Stanciu; DK - Dezső Kenderessy; DM - Dumitru Murariu; FB - Francesc Bajet; GC - Gabriel Chișamera; GDB - Giuseppe Della Bèffa; GL - George Ledoux; GP - George Popovici; IC - Igor Ceianu; JB - Jean Balazuc; JR - Jean Renault; LP - Louis Puel; MB - Mihai Băcescu; MP - Marius Palade; MȘP - Mihai Șerban Procheș; NS - Nicolae Săvulescu; RC - Richard Canisius; RPM - Răzvan Popescu Mirceni; RZ - Răzvan Zaharia; SG - Sorin Grigore; SP - Sergiu Panin; VG - Victor Gheorghiu; WH - Walter Heinz.

Other abbreviations: m a.s.l. – meters above sea level; Mt. – Mountain; spec./specs – specimen/specimens.

Results and Discussion

The present paper deals with data on twenty-two Palaearctic species and subspecies of tiger beetle, which belong to ten genera: *Calomera* (4 species), *Cassolaia* (1 species), *Cephalota* (2 species), *Cicindela* (7 species), *Cylindera* (3 species), *Homodela* (1 species), *Lophyra* (1 species), *Myriochila* (1 species), *Neolophyr*a (1 species) and *Megacephala* (1 species).

Family Cicindelidae Latreille, 1802
Tribe Cicindelini Latreille, 1802
Subtribe Cicindelina Latreille, 1802
Calomera Motschulsky, 1862
Calomera concolor concolor (Dejean in Latreille and Dejean, 1822) (Fig. 1)

Material examined: Turkey: "Taurus" Expedition: 2 ♂, 3 ♀, Antalya, Patara beach, at the mouth of the Eșen Çayi river, 17.VII.2005, GC (**CC**).

Distribution: Along the coasts of the Mediterranean Sea from Aegean Islands to Syria (including Crete, Cyprus and southern Turkey) (Franzen 1999; Austin et al. 2008).

Habitat: sandy sea coasts (Austin et al. 2008).

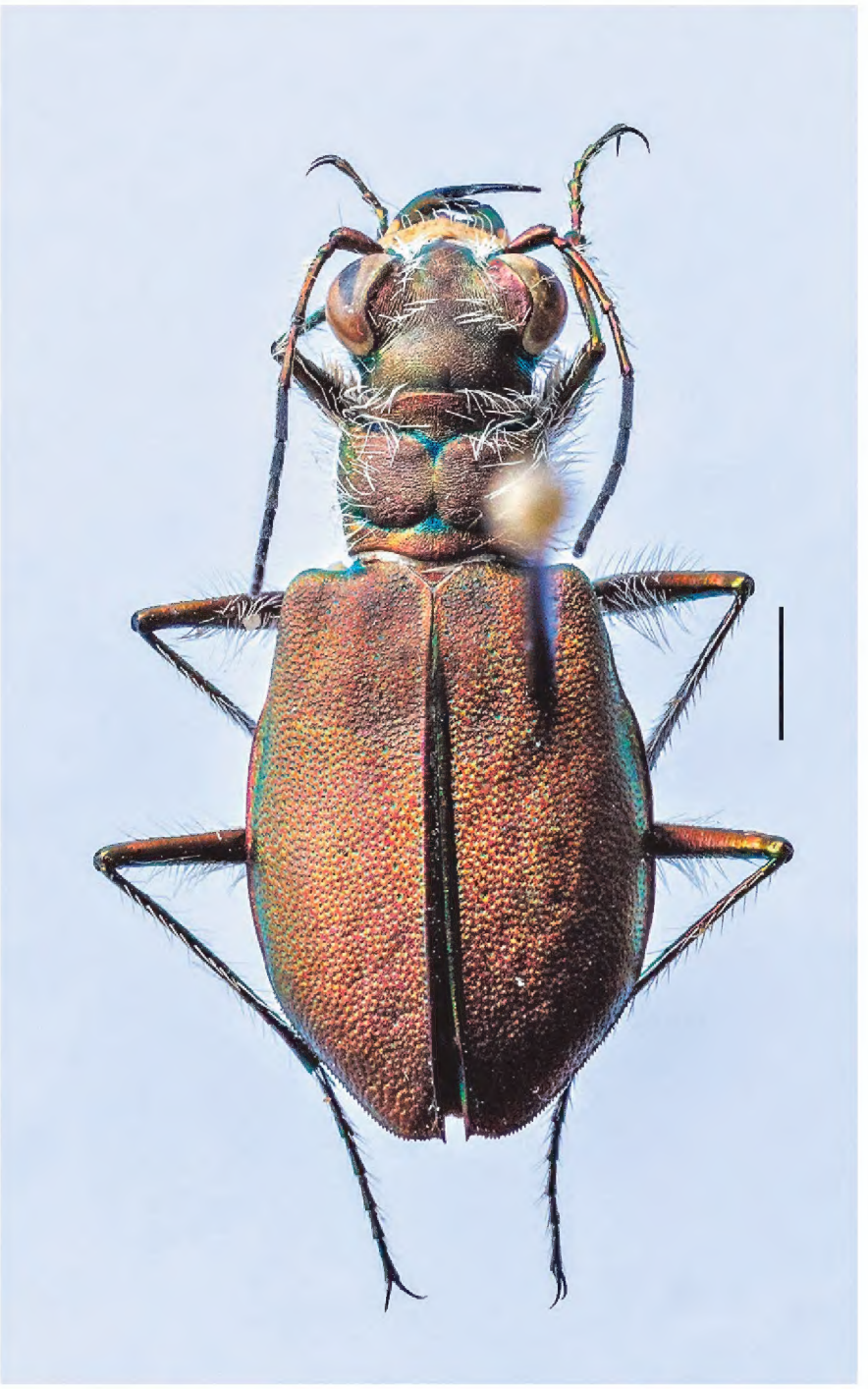

Figure 1. *Calomera concolor* (Dejean) – female (Turkey, Antalya, Patara beach). Photography by I. Ş. Iorgu. Scale bar = 2 mm.

Calomera littoralis littoralis (Fabricius, 1787) (Fig. 2)

Material examined: **Algeria**: 2 ♀, without other data, AP, coll. ALM.; **Spain**: 2 ♂, Tarifa [Cádiz], 26.VI.1961, GL, coll. GL; 2 ♀, Bujaraloz, Zaragoza, 24.IV.1977, CGP, coll. CGP (**CPC**)

Distribution: French mainland. North Africa (Algeria, Libya, Morocco, Tunisia), Portuguese mainland. Spanish mainland (Putchkov and Matalin 2003; Jaskuła et al. 2015).

Habitat: marine sandy beaches, river banks, salt marshes (Jaskuła and Rewicz 2015).

Calomera littoralis nemoralis Olivier, 1790

Material examined: **France**: 1 ♂, without other data, coll. ALM; **Bulgaria**: 1 ♀, Balcic (Caliacra), VIII.1920, coll. RC; 1 ♂, Plevna [Pleven], VII.1937, SP; 2 ♀, Ecrene [Kranevo], Dobrici [region], 17.V.1939, APG; **Greece:** 1 ♀, Crete, Kournas Lake, 7.VII.2018, GP (**CPC**); **Bulgaria**: 2 ♂, Ecrene [Kranevo], Dobrici [region], 17.V.1939, SP; 1 ♂, Shkorpilovci, 1.VIII.1994, MȘP; **Turkey**: "Taurus" Expedition: 2 ♂, 3 ♀, Antalya, Patara beach, at the mouth of the Eșen Çayi river, 18.VII.2005, GC (**CC**).

Distribution: Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, European Turkey, France, Greece, Hungary, Italy (Sicily), Macedonia, Republic of Moldova, Romania, Slovakia, Spain, Ukraine, Serbia, Montenegro (Putchkov and Matalin 2003).

Figure 2. *Calomera littoralis littoralis* (Fabricius) – female (Spain, Bujaraloz, Zaragoza). Photography by I. Ș. Iorgu. Scale bar = 2 mm.

Habitat: salt marshes, sandy sea beaches, banks of rivers, banks of lakes (Jaskuła et al. 2019).

Calomera lunulata Fabricius, 1781 (Fig. 3)

Material examined: **Tunisia**: "Punia" Expedition: 1 ♀, near Ennajet, Kerkennah Islands (34°47'21"N, 011°15'21"E), 20.III.2006, CP; 1 ♂, Kalâat el-Andalous, Medjerda River Delta (37°04'05"N, 010°10'35"E), 29.III.2006, RZ; **Morocco**: "Dakhla" Expedition: 1 ♂, 4 ♀, Oued El Maleh, 500 m a. s. l. (29°49'25"N, 007°11'53"W), 6.IV.2012, RZ; "Merzouga" Expedition: 1 ♂, 1 ♀, Berkane, Moulouya River Valley, 14.V.2013, RPM (**CC**).

Figure 3. *Calomera lunulata* Fabricius – male (Tunisia, Kalâat el-Andalous, Medjerda River Delta). Photography by I. Ș. Iorgu. Scale bar = 2 mm.

Distribution: North Africa (Morocco, Algeria, Tunisia, Libya); Europe: Italy Sicily (Putchkov and Matalin 2003) and Spain (Wiesner 2020).

Habitat: sea beach and inland salt lakes and river banks (Korell and Cassola 1987).

Cassolaia Wiesner, 1985

Cassolaia maura maura Linnaeus, 1758 (Fig. 4)

Material examined: **Spain**: 3 ♂, 1 ♀, Zaragoza, 20.VI.1975, coll. CGP **(CPC)**; **Morocco**: "Merzouga" Expedition: 4 ♂, 5 ♀, Dchar Beni Mtir, Oued El Abiod (34°08'54"N, 004°21'19"W, 264 m a.s.l.), 12.V.2013, CS; 3 ♂, 4 ♀, Berkane, Moulouya River Valley, 14.V.2013, CP and RPM; 6 ♂, 9 ♀, Moulouya River Valley, about 20 km west from Saidia (35°07'20"N, 002°20'38"W), 14.V.2013, CS, GC and CC **(CC).**

Figure 4. *Cassolaia maura maura* Linnaeus – male (Morocco, Dchar Beni Mtir, Oued El Abiod). Photography by I. Ș. Iorgu. Scale bar = 2 mm.

Distribution: North Africa (Morocco, Algeria), Europe: Portugal, Spania, Italy (Putchkov and Matalin 2003) and France (Wiesner 2020).

Habitat: salt marshes, river banks (Jaskuła and Rewicz 2015).

Cephalota Dokhtouroff, 1883
Cephalota (*Taenidia*) *circumdata imperialis* (Klug, 1834)

Material examined: Spain: 3 ♂, La Salada, Zaragoza [Aragon], 17.VII.1977, coll. CG (**CPC**)

Distribution: Balearic Islands, Sardinia, Sicily, Spanish mainland, Algeria, Tunisia (Gebert 1999) and Egypt (Wiesner 2020).

Habitat: salt flats (Rodríguez-Flores et al. 2016).

Cephalota (*Taenidia*) *circumdata leonschaeferi* Cassola, 1970

Material examined: **France**: 1 ♂, 2 ♀, Hyères [Var], without other data, coll. ALM (under the name *Cicindela circumdata circumdata* Dej.) (**CPC**)

Distribution: France (Languedoc, Camargue, Corsica), Italy (Toscana) (Gebert 1999).

Habitat: on salty soils (Cassola 1970, Franzen 1996).

Cicindela Linnaeus, 1758
Cicindela (*Cicindela*) *campestris campestris* Linnaeus, 1758

Material examined: **France**: 2 ♂, Maine-et-Loire, without other data, coll. ALM; 6 ♀, Ardèche, Mt. Mézenc, 1500–1700 m a.s.l., 12.VI.1960, coll. JB; 2 ♂, Mt. Lozère, 1500 m a.s.l., 2.IX.1963, coll. JB; 2 ♂, 2 ♀, Larrun [La Rhune], Pyrénées-Atlantiques, VI.1964, coll. JR; 1 ♀, Prats-de-Mollo-la-Preste [Pyrénées-Orientales], VII.1965, coll. JR; **Spain**: 1 ♂, Barcelona, 9.IV.1980, coll. FB; 2 ♂, 2 ♀, Valle de Vallivierna, Benasque, Huesca, 7.VI.1981, coll. FB; 2 ♂, 1 ♀, Valle de Ordesa, Pirineo Aragonés, Huesca, 20.VI.1981, coll. FB (**CPC**); **Republic of Moldova**: 1 ♀, Copanca, Căușeni county, 16.VI.1937, IC (**CC**).

Distribution: Europe: Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Russia: Central and North European Territories, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Serbia, Montenegro; North Africa: Algeria, Morocco; Asia: Iran, Kazakhstan, Kyrgyzstan, Russia-East and West Siberia, Uzbekistan (Putchkov and Matalin 2003).

Habitat: steppe and forest roads, mountain and highland pastures (Jaskuła 2011).

Cicindela (*Cicindela*) *gallica* Brullé, 1834 (Fig. 5)

Material examined: Italy: 1 ♀, Alpi Occ., Val Chisone, Colle delle Finestre [Piemonte region, Torino province], VII.1921, GDB; **France**: 2 ♂, 2 ♀, Gallia or., Dep. Basses-Alpes [Alpes-de-Haute-Provence], Col d' Allos, ca. 2200 m, 8.VIII.1962, WH, coll. WH (**CPC**).

Distribution: Austria, French mainland, Germany, Italian mainland, Liechtenstein, Slovenia, Switzerland (Putchkov and Matalin 2003).

Habitat: stenotope species, found in the alpine area (Kierdorf-Traut 2005).

Figure 5. *Cicindela gallica* Brullé – female (France, Dep. Basses-Alpes, Col d' Allos). Photography by I. Ș. Iorgu. Scale bar = 2 mm.

Cicindela (*Cicindela*) *hybrida hybrida* Linnaeus, 1758

Material examined: **France**: 1 ♂, Dunes de Camaret, coll. ALM; **Germany**: 1 ♀, Potsdam, Brandenburg Land, coll. RC (**CPC**); **Bulgaria**: 2 ♂, Ecrene [Kranevo], Dobrici [region], 17.V.1939, coll. SP; 1 ♂, Shkorpilovci, 1.VIII.1994, MȘP (**CC**).

Distribution: Europe: Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Macedonia, Moldavia, The Netherlands, Norway, Poland, Romania, Russia-South, Central and North European Territories, Slovakia, Slovenia, Sweden, Ukraine, Serbia, Montenegro (Putchkov and Matalin 2003).

Habitat: banks of rivers, mountain and highland pastures. Its preferred habitat corresponds to sandy areas, particularly linked to coastal dunes, moors and the edges of running water, from the alpine zone to sea level. It lives preferentially on gravel and sandbanks in streams, mountainous and hilly torrents, from alluvial plains to the mouths of rivers (Richoux 2010).

Cicindela (*Cicindela*) *maroccana maroccana* Fabricius, 1801

Material examined: **Morocco**: "Atlas" Expedition: 1 spec., Merdja Zerga lagoon, 14.IV.2007, SG (**CC**).

Distribution: North Africa: Morocco, Tunisia; Europe: Portugal, Spain (Putchkov and Matalin 2003).

Habitat: different sandy areas from lowland to mountains (Jaskuła and Rewicz 2015).

Cicindela (*Cicindela*) *soluta soluta* Dejean in Latreille and Dejean, 1822

Material examined: **Ukraine**: 1 ♀, Bugaz, Odessa region [the former Romanian county Cetatea Albă] 6.VII.1956, IC (**CC**).

Distribution: Central Europe, Balkan Peninsula, South Russia, Caucasus, West Siberia (Guéorguiev and Guéorguiev 1995) and Kazakhstan (Wiesner 2020).

Habitat: the species prefers sandy, sunny and weakly grassed grounds (Panin 1952).

Cicindela (*Cicindela*) *sylvatica sylvatica* Linnaeus, 1758

Material examined: **Germany**: 1 ♀, Fürstenwalde/Spree, Brandenburg Land, without other data, coll. RC; 1 ♂, Bernau bei Berlin, Brandenburg Land, without other data, coll. RC; 1 ♂, Berlin, Grünewald, Brandenburg Land, without other data, coll. RC; 1 ♀, without other data, coll. NS; 1 ♂, 1 ♀, without data, coll. DK; **Russia**: Ekaterinburg (Sverdlovsk), Ural federal district: 1 ♀, 18.VII.1951, coll. APG; 1 ♀, VI.1952, coll. NS (**CPC**)

Distribution: Europe: Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, The Netherlands, Poland, Romania, Russia-South, Central and North European Territories, Slovakia, Slovenia, Sweden, Switzerland, Ukraine, Serbia, Montenegro; Asia: Russia-East, West Siberia and Far East, China-Heilongjiang, Jilin, Nei Mongol and Xinjiang; Japan, Kazakhstan, Mongolia, North Korea (Putchkov and Matalin 2003).

Habitat: forested sandy areas (Jaskuła 2011).

Cicindela (*Cicindela*) *sylvicola sylvicola* Dejean in Latreille and Dejean, 1822

Material examined: **France**: 1 ♀, Grande Chartreuse [Grenoble], without other data, coll. ALM (**CPC**)

Distribution: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, French mainland, Germany, Hungary, Italian mainland, Luxembourg, Macedonia, Moldavia, Poland, Romania, Slovenia, South European Russia, Switzerland, Ukraine, Serbia, Montenegro (Putchkov and Matalin 2003).

Habitat: forest roads, mountain and highland pastures (Jaskuła 2011).

Cylindera Westwood, 1831

Cylindera (*Cylindera*) *germanica germanica* Linnaeus, 1758

Material examined: **Republic of Moldova**: 1 spec., Tighina, 2.V.1957, IC; **Russia**: 2 specs, Soci [Krasnodar region], Staraya Matsesta, 12.VIII.1992, MȘP (**CC**).

Distribution: Europe: Azerbaijan, Albania, Andorra, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Georgia, Hungary, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Moldavia, The Netherlands, Norway, Poland, Romania, Russia: South, Central and North European Territories, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine, Serbia, Montenegro; Asia: Cyprus, Iran, Kazakhstan, Russia-East and West Siberia, Syria, Turkmenistan, Turkey (Putchkov and Matalin 2003).

Habitat: the species is found on sandy fields, on the grassy edges of roads, sometimes on roads and forest paths. It has also been observed on freshwater shores (Panin 1952).

Cylindera (*Cylindera*) *paludosa* L. Dufour, 1820 (Fig. 6)

Material examined: **France**: 1 ♂, Camargue, without other data, LP; 1 ♂, 1 ♀ Béziers, [Hérault], without other data, AP; **Spain**: 2 ♂, 2 ♀ La Pineda, Tarragona [Catalonia], 16.VI.1975, CG, coll. CG (**CPC**)

Distribution: France, Spain (Putchkov and Matalin 2003).

Habitat: salt marshes with typical halophytic vegetation (Rodríguez-Flores et al. 2016).

Cylindera (*Eugrapha*) *arenaria arenaria* (Fuessly, 1775) (Fig. 7)

Material examined: **France**: 1 ♂, Lyon [Rhône], without other data, coll. ALM (**CPC**).

Distribution: Austria, Belgium, French mainland, Italian mainland, Luxembourg, Sicily, Switzerland (Putchkov and Matalin 2003).

Habitat: it is strictly subservient to sandystreams, rivers and torrents in the plains and mid-mountains, it is essentially linked to braiding areas (Richoux 2010).

Figure 6. *Cylindera paludosa* L. Dufour – female (Spain, La Pineda, Tarragona). Photography by I. Ș. Iorgu. Scale bar = 2 mm.

Figure 7. *Cylindera arenaria arenaria* (Fuessly) – male (France, Lyon). Photography by I. Ş. Iorgu. Scale bar = 2 mm.

Homodela Rivalier, 1950

Homodela ismenia ismenia Gory, 1833 (Fig. 8)

Material examined: **Turkey:** 1 ♂, 1 ♀, Anatolia bor., Çorum, Mecitözü, about 700 m a.s.l., 17.IV.1974, WH, coll. WH **(CPC)**.

Distribution: Asia: Turkey (Franzen 2003). Anatolian endemic species.

Habitat: in open forests and in grasslands, mainly on sandy ground in higher elevations (Korell 1988; Avgin 2006).

Figure 8. *Homodela ismenia ismenia* Gory – female (Turkey - Çorum, Mecitözü). Photography by I. Ş. Iorgu. Scale bar = 2 mm.

Lophyra Motschulsky, 1859
Lophyra flexuosa flexuosa (Fabricius, 1787)

Material examined: **Algeria**: 1 ♂, without other data, coll. ALM; **France:** 1 ♂, France meridionale, without other data, coll. ALM; 1 ♂, Carcassonne [Aude], without other data, BB, coll. ALM; 1 ♂, 4 ♀, Labeaume, Ardèche, 17.V.1965, coll. JB; 3 ♂, 1 ♀ the banks of the river Ardèche, Ardèche, 11.VII.1970, JB, coll. JB; **Grecee**: 1 ♂, Athens, without other data, coll. RC; **Italy**: 1 ♂, Sicily, without other data, AP, coll. ALM (**CPC**); **Libya**: 3 ♂, 2 ♀ Tripoli, 20.VIII.1977, MB; **Tunisia**: "Punia" Expedition: 5 ♂, 2 ♀, at 8 km from Bir Thelethin (32°37'28"N, 010°18'30"E), 11.III.2006, GC; 2 ♂, 3 ♀, Kebili (33°46'02"N, 008°51'49"E), 14.III.2006, GC; 2 ♂, 3 ♀, at 4 km east from Mides (34°24'10"N, 007°57'12"E, 332 m a.s.l.), 17.III.2006, CP; 1 ♀, Hazoua Oasis

(33°44'46"N, 007°37'44"E, 40 m a.s.l.), 17.III.2006, RZ; 1 ♀, Cap Serrat (37°13'10"N, 009°13'23"E), 26.III.2006, CP; **Morocco**: "Atlas" Expedition: 2 ♂, Essaouira, Cap Sim, 12 km south, 17.IV.2007, DM; "Dakhla" Expedition: 9 ♂, 4 ♀, Sidi Kaouki, 23.III.2012 (31°19'40"N, 009°47'36"W, 480 m a.s.l.), VG and CS; 2 ♂, 3 ♀, Sidi Kaouki, 14.IV.2012, CP and CS; 10 ♂, 7 ♀, Oued El Maleh, 6.IV.2012 (29°49'25"N, 007°11'53"W, 500 m a.s.l.), RZ; 1 ♂, Oued El Maleh, 6.IV.2012 (29°49'24"N, 007°11'53"W, 490 m a.s.l.), VG; "Merzouga" Expedition: 1 ♂, 3 ♀, Dchar Beni Mtir, on the banks of the river Oued El Abiod, 12.V.2013 (34°08'54"N, 004°21'19"W, 264 m a.s.l.), CS and RZ **(CC).**

Distribution: Europe: Portugal, Spain, Andorra, France, Italy, Switzerland; Asia: Israel, Egypt (Sinai); Africa: Morocco, Tunisia, Algeria, Libya, Egypt (Matalin and Chikatunov 2016).

Habitat: inhabiting sandy beaches of the mouths of the rivers and willingly goes up the river until far inland.

A psammophilous species, which is commonly found on sandy beaches and coastal dunes of the Atlantic and the Mediterranean, goes up the river valleys of the Garonne and the Adour as well as the Mediterranean coastal rivers and especially those of the Rhône and its tributaries (Richoux 2010).

Myriochila Motschulsky, 1857

Myriochila melancholica melancholica (Fabricius, 1798) (Fig. 9)

Material examined: 2 ♂, 4 ♀, without data **(CPC)**; **Morocco**: "Merzouga" Expedition: 1 ♂, 1 ♀, Oued El Maleh (29°49'24"N, 007°11'53"W, 490 m a.s.l.), 28.V.2013, VG **(CC)**.

Distribution: spreading throughout Africa and of southern Europe over the Middle East until Asia. It is common in North Africa and extending eastwardly through Palestina, Syria, Arabia and Asia Minor until Persia (Abdel-Dayem et al 2003).

Habitat: it mainly inhabits salty marshes but it is also found on river banks (Jaskuła 2007, Rodríguez-Flores et al 2016).

Neolaphyra Bedel, 1895

Neolaphyra truquii Guérin – Meneville, 1855 (Fig. 10 A, B)

Material examined: **Tunisia**: "Punia" Expedition**:** 1 ♂, Kebili (33°46'02"N, 008°51'49"E, 30 m a.s.l.), 14.III.2006, RZ; 4 km East of Mides (34°24'10"N, 007°57'12"E, 332 m a.s.l.): 4 ♂, 9 ♀, 16.III.2006, CP and RZ; 5 ♂, 7 ♀, 17.III.2006, CP and GC (**CC**).

Distribution: Algeria, Morocco, Tunisia (Putchkov and Matalin 2003; Jaskuła et al. 2015).

Habitat: sandy steppe and dunes overgrown mainly by *Stipa tanacissima* L. (Jaskuła and Rewicz 2015).

Figure 9. *Myriochila melancholica melancholica* (Fabricius) – male (Morocco, Oued El Maleh). Photography by I. Ş. Iorgu. Scale bar = 2 mm.

Tribe Megacephalini Laporte, 1834
Subtribe Megacephalina Laporte, 1834
Megacephala Motschulsky, 1850
Megacephala (*Grammognatha*) *euphratica euphratica* Dejean, 1822

Material examined: **Algeria**: 1 spec., Touggourt, without other data, AP, coll. ALM; **North Africa**: 1 spec., without other data, coll. DK (**CPC**); **Morocco**: "Dakhla" Expedition: 1 ♀, Oued El Maleh (28°32'59"N, 10°59'09.6"W), 6.III.2012, CS; 1 ♂, 2 ♀, Hassi Tafnidilt (28°32'59.3"N, 10°59'09.6"W) 25.III.2012, DM and GC; "Merzouga" Expedition**:** 54 ♂, 50 ♀, Moulouya River Valley, about 20 km west from Saidia (35°07'20"N, 002°20'38"W), 14.V.2013, MP, CS, GC, CC and RZ; 2 ♀,

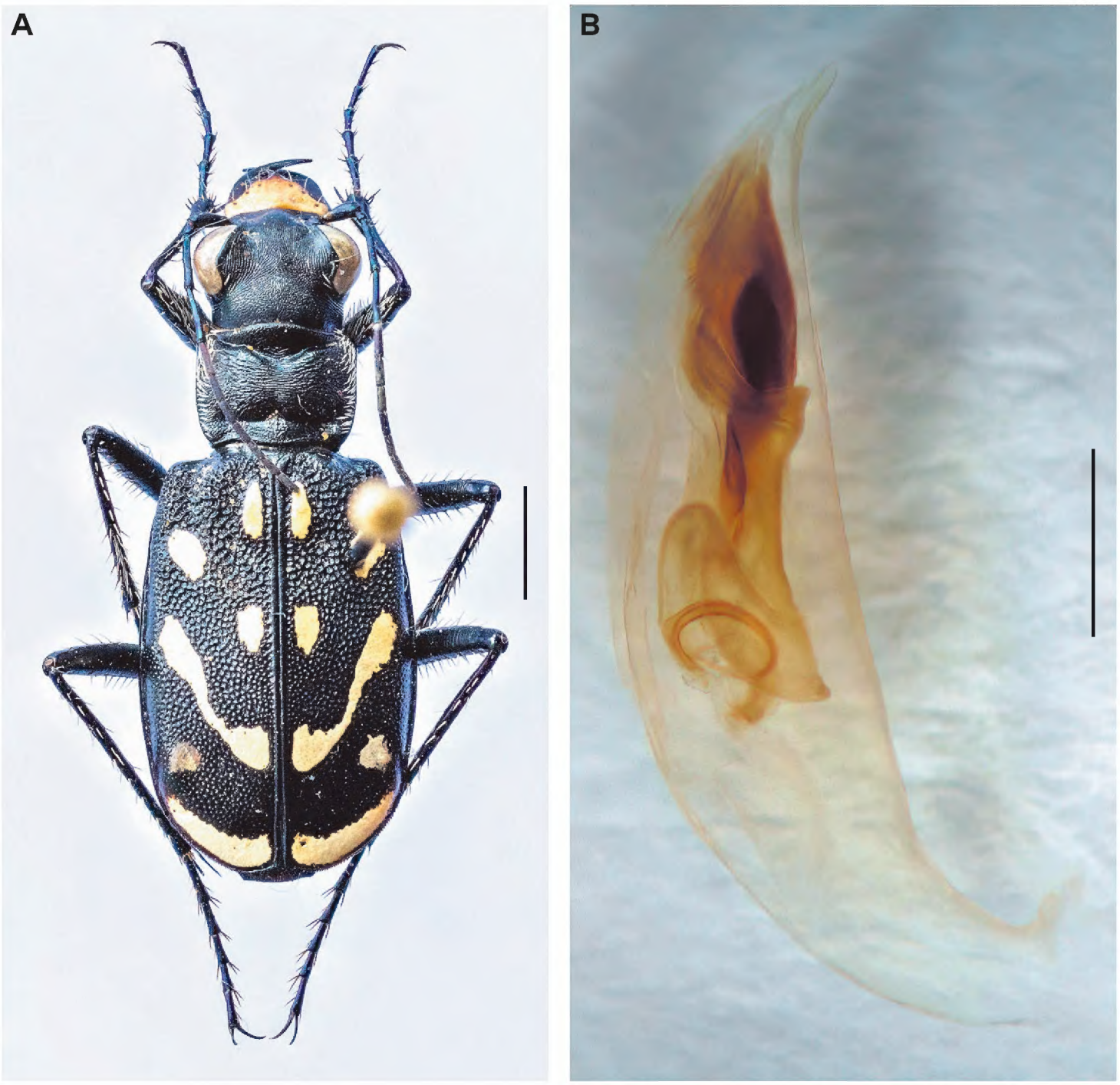

Figure 10. *Neolaphyra truquii* Guérin – Meneville (**A** habitus, female – Tunisia, 4 km East of Mides, 16.III.2006; **B** aedeagus). Photography by I. Ș. Iorgu. Scale bar: A = 2 mm, B = 1 mm.

Ksabi Moulouya, Moulouya River Valley (32°51'53"N, 004°16'43"W, 1004 m a.s.l.), 22.V.2013, GC (**CC**).

Distribution. Europe: Spain, Greece (Rhodes, Crete); Asia: Cyprus, Turkey, Lebanon, Israel, Jordan, Syria, Egypt (Sinai), Saudi Arabia, Arab Emirates, Kuwait, Oman, Yemen, Iran, Iraq, Pakistan; Africa: Morocco, Tunisia, Algeria, Libya, Egypt, Djibouti (Matalin and Chikatunov 2016).

Habitat: saltmarshes (Assmann et al 2018, Jaskuła and Płóciennik 2020).

The faunistic survey of the tiger beetle species of "Grigore Antipa" Museum's collections highlighted 28 species and subspecies. In our studies, we have preferred to present the cicindelids fauna of Romania separately from other Palearctic species (Stan and Serafim 2021). In addition to Romania, there are specimens which came

from: Algeria, Bulgaria, France, Germany, Greece, Italy, Libya, Morocco, Republic of Moldova, Russia, Spain, Tunisia, Turkey, Ukraine. The material exchanges and especially the expeditions contributed to enriching the collections both quantitatively and qualitatively, the following species representing new additions to the museum collections: *Calomera concolor*, *C. lunulata*, *Cicindela maroccana maroccana*, *Homodela ismenia ismenia* and *Neolaphyra truquii*.

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References

Abdel-Dayem MS, El-Hawagry MSA, Hassan SA (2003) A review of the Egyptian species of tiger beetles (Coleoptera, Carabidae, Cicindelinae). Bulletin of the Entomological Society of Egypt 80: 193–217.

Assmann T, Boutaud E, Buse J, Gebert J, Drees C, Friedman A L L, Khoury F, Marcus T, Orbach E, Renan I, Schmidt C, Zumstein P (2018) The tiger beetles (Coleoptera, Cicindelidae) of the southern Levant and adjacent territories: from cybertaxonomy to conservation biology. ZooKeys 734: 43–103.

Avgin SS (2006) General information and Tiger Beetles *Cicindela herbacea*; *Calomera fischeri fischeri* and *Homodela ismenia kilikiensis* collected from Southeast of Turkey (Coleoptera: Cicindelidae). Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi 8(2): 23–28.

Austin K, Small E, Lemaire J-M, Jeanne C, Makris C, Georghiou G (2008) Revision du Catalogue des Carabidae (Coleoptera) de Chypre. Annales du Muséum d' Histoire Naturelle de Nice 23: 1–199. [in French]

Bedel L (1895) Fam 1 Cicindelidae. In: Catalogue raissoné des coléoptères du nord de l'Afrique (Maroc, Algérie, Tunisie et Tripolitaine) avec notes sur la faune des Iles Canaries et de Madère. Premiere Partie. Paris, Société entomologique de France, 1–13. [in French]

Bourgeois J (1897) Note sur *Cicindela leucosticta* Fairm. et autres espèces du groupe des *Neolaphyra* [Col.]. In: Bulletin de la Société entomologique de France 2(3): 40–42. [in French]

Cassola F (1970) Ecologia, distribuzione geografica e subspeciazione di *Cicindela* (*Taenidia*) *circumdata* Dej. Bolletino dell'Associazione Romana di Entomologia 25(3): 59–70. [in Italian]

Franzen M (1996) Zur Systematik von *Cephalota circumdata* Dejean in der Türkei: Beschreibung von zwei neuen Unterarten aus Zentralanatolien (Coleoptera, Carabidae, Cicindelinae). Coleoptera (Schwanfelder Coleopterologische Mitteilungen) 15: 1–12. [in German]

Franzen M (1999) Zum taxonomischen Status levantinischer *Lophyridia concolor* (Dejean, 1822) (Coleoptera, Cicindelidae). Nachrichtenblatt bayerischer Entomologen 48: 77–85. [in German]

Franzen M (2003) Taxonomische Revision von *Homodela ismenia* (Gory, 1833) mit Beschreibung einer neuen Unterart aus der Südost-Türkei (Coleopera: Cicindelidae). Spixiana 26(3): 277–287. [in German]

Gebert J (1999) Bemerkungen zur Phylogenie und Verbreitung von *Cepalota* (*Taenidia*) *circumdata* Dejean, 1822 (Col, Carabidae, Cicindelinae). Entomologische Nachrichten und Berichte 43(1): 27–31. [in German]

Gebert G (2004) Unterfamilie Cicindelinae. In: Freude H, Harde KW, Lohse GA, Klausnitzer B (Eds) Die Käfer Mitteleuropas, Spektrum-Verlag (Heidelberg/Berlin), 2. Auflage, 15–24. [in German]

Guéorguiev VB, Guéorguiev BV (1995) Catalogue of the ground-beetles of Bulgaria (Coleoptera: Carabidae). Pensoft Publishers, Sofia-Moscow, 279 pp.

Jaskuła K (2007) Remarks on distribution of tiger beetles (Coleoptera: Cicindelinae) of Albania. Fragmenta Faunistica 50(2): 127–138.

Jaskuła K (2011) How unique is the tiger beetle fauna (Coleoptera: Cicindelinae) of the Balkan Peninsula? Zookeys 100: 487–502. doi: 10.3897/Zookeys 482.8831

Jaskuła R, Rewicz T (2015) Tiger Beetles (Coleoptera, Carabidae: Cicindelinae) of Tunisia: Distribution, Phenology, Taxa List and New Records. African Entomology 23(2): 467–485. doi: 10.4001/003.023.0217

Jaskuła R, Rewicz T, Kwiatkowski K (2015) Tiger beetle fauna (Coleoptera: Carabidae, Cicindelinae) of Morocco: distribution, phenology and list of taxa. Entomologica Fennica 26: 132–155.

Jaskuła R, Płóciennik M, Schwerk A (2019) From climate zone to microhabitat-environmental factors affecting the coastal distribution of tiger beetles (Coleoptera: Cicindelidae) in the south-eastern European biodiversity hotspot. Life and Environment – PeerJ. 7: e6676. Published online 2019 Apr 9. doi: 10.7717/peerj.6676

Jaskuła R, Płóciennik M (2020) Water Is Needed to Exist: Habitat Preferences of Tiger Beetles (Coleoptera: Cicindelidae) in a Desert Country. Insects 11(11): 809. https://doi.org/10.3390/insects11110809

Korell A (1988) Die Cicindeliden (Coleoptera) Anatoliens. Entomologia Basiliensia 12: 93–111 [in German]

Korell A, Cassola F (1987) Über die Sandlaufkäfer - Arten Tunesiens (Coleoptera, Cicindelidae). Mitteilungen der Münchner Entomologischen Gesellschaft 77: 85–101. [in German]

Kierdorf-Traut G (2005) Die Sandlaufkäfer Südtirols (Coleoptera: Carabidae: Cicindelinae). Gredleriana 5: 191–208. [in German]

Matalin AV, Chikatunov VI (2016) The tiger beetles (Coleoptera, Carabidae, Cicindelinae) of Israel and adjacent lands. ZooKeys 578: 115–160.

Panin S (1952) Coleoptera: Familia Cicindelidae. In: Fauna R. P. R. Insecta 10(1). Editura Academiei București, 1–13. [in Romanian]

Putchkov AV, Matalin AV (2003) Subfamily Cicindelinae. In: Löbl I, Smetana A (Eds) Catalogue of Palaearctic Coleoptera. Vol. 1. Archostemata – Myxophaga – Adephaga. Apollo books, Stenstrup, 99–118.

Reitter E (1908) Familie Cicindelidae. In: Fauna Germanica. Die Käfer des Deutschen Reiches: Part I, Stuttgart, 67–70. [in German]

Richoux P (2010) Cicindèles et psammicoles: des habitats alluviaux menacés. Bulletin mensuel de la Société Linnéenne de Lyon, hors-série 2: 133–135. [in French]

Rodríguez-Flores PC, Gutierrez-Rodriguez J, Aguirre-Ruiz EF, Garcia-Paris M (2016) Salt lakes of La Mancha (Central Spain): A hot spot for tiger beetle (Carabidae, Cicindelinae) species diversity. ZooKeys 561: 63–103.

Stan M, Serafim R (2021) Tiger beetles of Romania (Coleoptera: Carabidae, Cicindelinae) in the Collections of "Grigore Antipa" National Museum of Natural History, Bucharest. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 64(2): 69–91.

Wiesner J (2020) Checklist of the tiger beetles of the world. 2nd Edition. Winterwork, Borsdorf, 540 pp.